

**STUDENT-TEACHER INTERACTIONS DURING STUDENT PRESENTATIONS THAT CONTAIN MATHEMATICAL ERRORS IN SECONDARY CLASSROOMS**

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There has been a push towards increasing student-centered learning within mathematics classrooms (NCTM, 2000; 2014; NGA & CCSSO, 2010), which has been shown to improve both mathematics achievement and overall attitudes (Zarkaria et al., 2010). Student presentations of their mathematical work allow teachers to build on student thinking to optimize learning for the class as a whole. The presentation of student work can sometimes give rise to errors. Rather than these instances being avoided or dismissed, presentations of incomplete or incorrect student work can be opportunities for pivotal teaching moments (Stockero & van Zoest, 2013; van Zoest et al., 2017). When teachers discuss and build upon incomplete or incorrect student work, they may do so in a variety of ways. Previous studies have documented how teachers may build on incorrect student thinking (van Zoest et al., 2017) and authority relations among teachers and students during class presentations (Byun et al., 2020). In this study, we detail how teachers and students interact when incorrect mathematics is presented to better understand this particular aspect of teaching practice. Our study investigates the question: How do students and teachers interact when students present incorrect or incomplete mathematics in secondary classrooms?

To answer this question, we analyzed video of nine 100-minute lessons that contained student presentations, three each from three secondary mathematics classrooms. With the use of *Datavyu* software, we first coded the various activity formats used within these lessons to identify instances of student presentations. We closely analyzed these specific episodes to capture the variety in student-teacher interactions when incorrect mathematics was presented. Through a process of open and axial coding (Corbin & Strauss, 2014), we analyzed relevant aspects of student-teacher interactions within these episodes.

We found three distinct ways in which the teachers brought other students into the conversation. These other students advanced the presentation in different ways. One way involved the teacher restating other students' comments or questions to include them in the discussion. A second way that teachers involved other students was to ask the class follow-up questions in order to fill in the gaps throughout the presentations. In the third way, teachers invited other students to help the presenter, even allowing the presenter to choose which student supported them.

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